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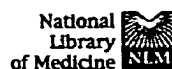
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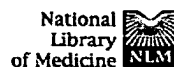
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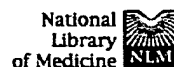
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**FULL TEXT OF CASES (USPQ2D)**

All Other Cases

Ex parte Levengood (BdPatApp&Int) 28 USPQ2d 1300 (4/22/1993)

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Ex parte Levengood (BdPatApp&Int) 28 USPQ2d 1300

**Ex parte Levengood**

**U.S. Patent and Trademark Office, Board of Patent Appeals and  
Interferences  
28 USPQ2d 1300**

Decided April 22, 1993

No. 92-3654

**Headnotes**

**PATENTS**

**1. Patentability/Validity -- Obviousness -- Combining references -- (§ 115.0905)**

Motivation for combining prior art references need not be explicitly found in references themselves, and examiner may provide explanation based on logic and sound scientific reasoning that will support holding of obviousness; fact that invention's theoretical mechanism can be reconstructed and explained by means of logic and sound scientific reasoning does not, however, support obviousness determination unless that logic and reasoning would supply sufficient impetus to have led one of ordinary skill in art to combine references to make claimed invention, and thus examiner cannot establish obviousness by locating references which describe various aspects of applicant's invention unless examiner also provides evidence of motivating force which would impel person skilled in art to do what applicant has done.

**Case History and Disposition:**

Page 1300

Appeal from final rejection of claims in application for patent (Elizabeth C. Weimar, supervisory patent examiner; Gary Benzion, examiner).

Patent application of William C. Levengood, serial no. 539,302, filed June 16, 1990, which is a continuation of application serial no. 363,451, filed June 6, 1989, now abandoned; which is a continuation of application serial no. 907,858, filed Sept. 15, 1986, now abandoned; which is a continuation-in-part of application serial no. 545,656, filed Oct. 26, 1983, now abandoned; which is a continuation-in-part of application serial no. 309,607, filed Oct. 8, 1981, now abandoned (method for producing new varieties of plants). From final rejection of all claims remaining in application, applicant appeals. Reversed.

**Attorneys:**

Ian C. McLeod, Okemos, Mich., for appellant.

**Judge:**

Before Steiner, Goolkasian, and Tarring, examiners-in-chief.

**Opinion Text**

**Opinion By:**

Goolkasian, examiner-in-chief.

This is an appeal from the examiner's final rejection of claims 6 through 30, which are all the claims remaining in the application.

Claim 29 is illustrative of the invention and reads as follows:

29. A method for increasing the proportion of altered phenotypes in generations subsequent to at least one progenitor member of a first species of plant, said first species having at least one established phenotype, and said method comprising:

placing said at least one member of said first species in contact with whole cells and associated materials of a second species of plant while simultaneously applying an electrophoretic current across said at least one member of said first species and said whole cells and associated materials of said second species, during a time said at least one member is in a germinal stage; and

allowing said member of said first species to develop from said germinal stage.

The references relied on by the examiner are:

Levengood	3,822,505	Jul. 9, 1974
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Janick, *Horticultural Science*, Second Edition, W.H. Freeman and Company, 1963, page 248. Holl et al. (Holl), *Tissue Culture And Plant Science*, "Genetic Transformation in Plants," Proceedings of the third international congress of plant tissue and cell culture held at the University of Leicester, Leicester, England, July 21-26, 1974, pages 303-306, 308-311 and 320-322.

Appellant's invention is directed to a method for increasing the proportion of mutants in a subsequent generation of a member of a plant species having a recognized and established phenotype. The method involves contacting a member of a first plant species (the recipient) with whole cells and associated materials of a second species (the donor), while the member is in a germinal stage, and simultaneously subjecting the contacted combination to electrophoretic conditions. Appellant believes that mutation occurs via the transduction or migration of genetically associated cell tissue components and macromolecular complexes from the donor (second) species to the recipient (first) species of plant. In a preferred process, the first species of plant comprises corn or tomato and the donor species is Eastern Marsh cabbage root.

All of appellant's claims stand rejected under 35 U.S.C. Section 103 over Levengood in view of the combined teachings of Janick and Holl. We reverse the rejection.

As noted by the examiner, the Levengood Patent describes a method for increasing the proportion of mutants in a single plant species by applying electrical field gradients to the plant while it is in the germinal stage. Importantly, the Levengood reference does not suggest that members of a first plant species should be placed in contact with whole cells and associated materials of a second species while simultaneously applying the electrophoretic current.

The Janick and Holl references are not concerned with the application of electrical current and merely teach standard grafting and/or genetic engineering procedures. Janick describes the grafting of one type of plant onto the rootstock of another type of plant; for example, fruit trees are grafted onto dwarfing rootstocks in order to produce dwarf fruit trees, and watermelon is grafted onto the gourd *Langenaria* to control Verticillium wilt. This reference has little bearing on what is being claimed. The Holl reference teaches that DNA is capable of being transferred from one species of plant to another, usually by using modified bacteria to infect the plant and incorporate heterologous DNA therein. Importantly, neither Holl nor Janick suggest carrying out their respective processes while simultaneously applying an electrophoretic field.

At pages 4 and 5 of the Answer, the examiner has set forth the rationale for the rejection. The examiner notes that each reference discloses a different aspect of the claimed process. The examiner also notes that all aspects were "well known in the art." The examiner then indicates that because the various aspects of the claimed process were individually known in the art, the modifications of the electrophoretic process of Levengood by exposing Levengood's plant materials to cell-associated materials in order to "graft" or otherwise incorporate the cell associated material into the plants was "well within the ordinary skill of the art at the time the claimed invention was made."

We reverse the rejection because the examiner has used the wrong standard of obviousness.

Obviousness is a legal conclusion, the determination of which is a question of patent law. *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963). In order to establish a *prima facie* case of obviousness, it is necessary for the examiner to present evidence, preferably in the form of some teaching, suggestion, incentive or inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art *would have been led* to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention. See, for example, *Carella v. Starlight Archery*, 804 F.2d 135, 231 USPQ 644 (Fed. Cir. 1986); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985).

[1] Motivation for combining the teachings of the various references need not be explicitly found in the references themselves, *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Indeed, the examiner may provide an explanation based on logic and sound scientific reasoning that will support a holding of obviousness. *In re Soli*, 317 F.2d 941, 137 USPQ 797 (CCPA 1963).<sup>2</sup>

In this case, however, the only suggestion for the examiner's combination of the isolated teachings of the applied references improperly stems from appellant's disclosure and not from the applied prior art. *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA 1979). At best, the examiner's comments regarding obviousness amount to an assertion that one of ordinary skill in the relevant art would have been able to arrive at appellant's invention because he had the necessary skills to carry out the requisite process steps. This is an inappropriate standard for obviousness. See *Orthokinetics Inc. v. Safety Travel Chairs Inc.*, 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986). That which is within the capabilities of one skilled in the art is not synonymous with obviousness. *Ex parte Gerlach*, 212 USPQ 471 (Bd.App. 1980). See also footnote 16 of *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1092, 227 USPQ 337, 343 (Fed. Cir. 1985). That one can *reconstruct* and/or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of the references to make the claimed invention.

Our reviewing courts have often advised the Patent and Trademark Office that it can satisfy the burden of establishing a *prima facie* case of obviousness only by showing some objective teaching in either the prior art, or knowledge generally available to one of ordinary skill in the art, that "would lead" that individual "to combine the relevant teachings of the references." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989). Accordingly, an examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done.

In the case before us, the examiner has provided references having teachings which go a long way towards providing a scientific explanation for *what happened* when appellant performed the claimed combination of process steps. However, the references themselves fall far short of providing the "motivation" or "suggestion" to assemble their teachings into a viable process. A *prima facie* case of obviousness has not been made out.

The examiner's rejection of claims 6 through 30 is reversed.

**REVERSED.**

### Footnotes

**Footnote 1.** The importance of evidence in the examination process is set forth in the following quotation from *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984):

The Supreme Court in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), focused on the procedural and evidentiary processes in reaching a conclusion under section 103. As adapted to ex parte procedure, Graham is interpreted as continuing to place the 'burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under sections 102 and 103'. *In re Warner*, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967). After a *prima facie* case of obviousness has been established, the burden of going forward shifts to the applicant.

**Footnote 2.** Preferably the examiner's explanation should be such that it provides that impetus necessary to cause one skilled in the art to combine the teachings of the references to make the proposed modification. *In re Albrecht*, 514 F.2d 1385, 185 USPQ 585 (CCPA 1975). See also *Fromson v. Advance Offset Plate Inc.*, 720 F.2d 1565, 219 USPQ 1137 (Fed. Cir. 1983).

**- End of Case -**

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